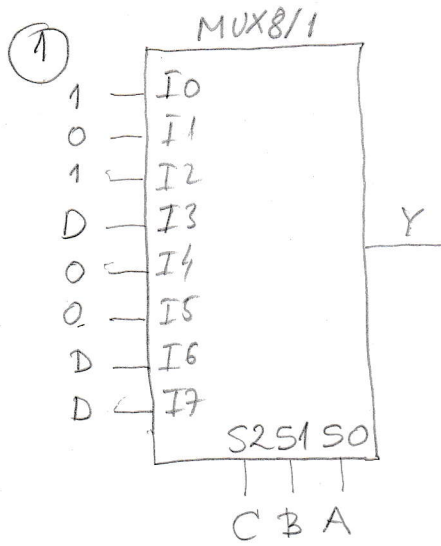




Y

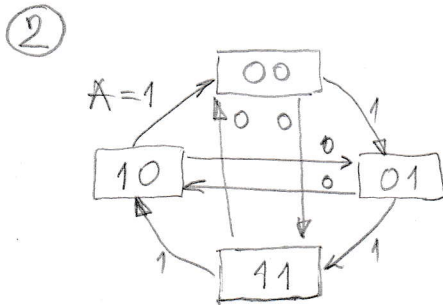
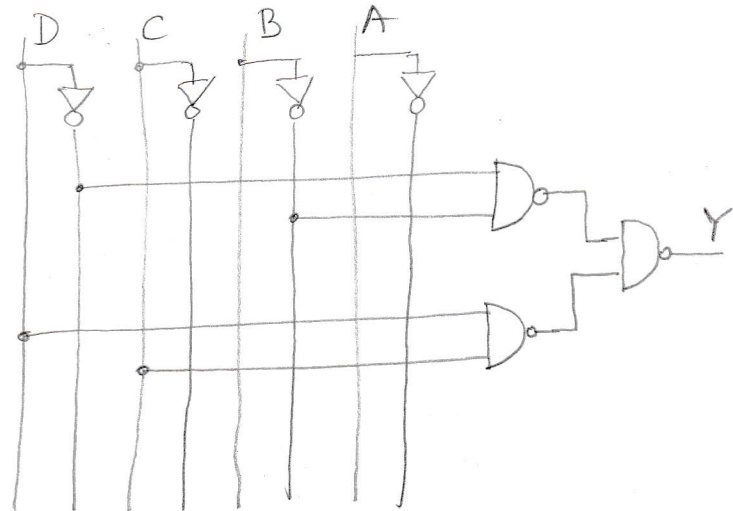
BA

	00	01	11	10
00	1	1		
01	1	1		
11	1	1	1	1
10				

DC

$$Y = \bar{D}\bar{B} + DC$$

DC	B	A	Y
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	0
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	0
1	1	0	1
1	1	1	1



D1

Q1Q0

	00	01	11	10
0	1	1		
1			1	1

$$D1 = \bar{A}\bar{Q}1 + AQ0$$

D0

Q1Q0

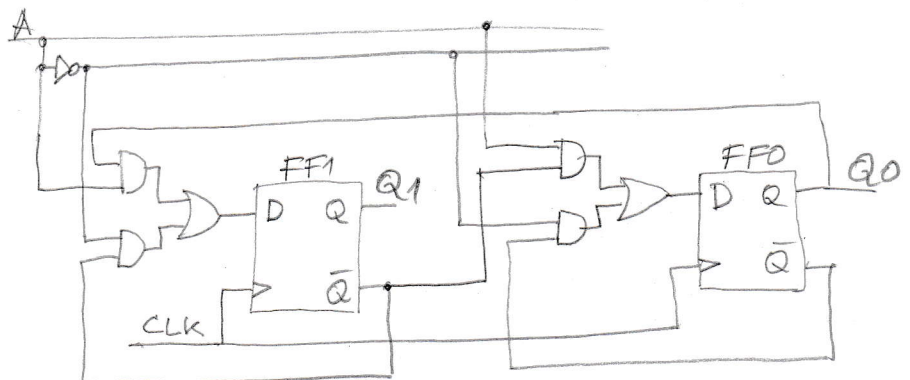
	00	01	11	10
0	1			1
1	1	1		

$$D0 = \bar{A}\bar{Q}0 + AQ1$$

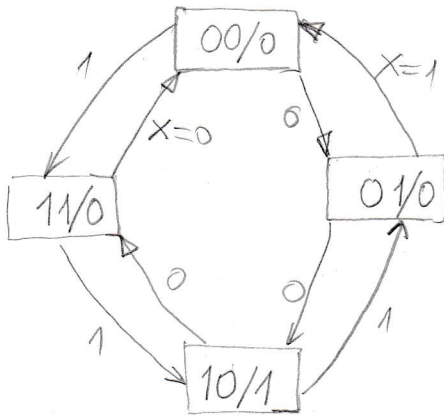
	n		n+1	
A	Q1	Q0	Q1	Q0
0	0	0	1	1
0	0	1	1	0
0	1	0	0	1
0	1	1	0	0
1	0	0	0	1
1	0	1	1	1
1	1	0	0	0
1	1	1	1	0

$$D1 = Q1(n+1)$$

$$D0 = Q0(n+1)$$



3



$X=0$, 2bit up-counter, NBCD code

$X=1$, 2bit down-counter, NBCD code

For $S2 \rightarrow y=1$

4

